

PATENT

Atty. Dkt. No. WEAT0314

IN THE CLAIMS:

1.-31. (Canceled)

32. (Currently Amended) A system for pumping a production fluid from a wellbore, comprising:

a high pressure multiphase pump coupled to an outlet line and operable to pressurize a first mixture of a liquid and a gas so that at least a portion of the gas dissolves in the liquid; and

a jet pump:

disposed in the wellbore proximate to a formation,

coupled to the outlet line so that the second pump may receive the pressurized first mixture,

having an inlet for receiving the production fluid, and

operable to throttle the first mixture, thereby drawing the production fluid into the inlet, forming a second mixture comprising the first mixture and the production fluid, and allowing at least a portion of the dissolved gas to escape from the solution as the second mixture rises to a surface of the wellbore, thereby lowering a pressure gradient of the second mixture to increase a production rate of the production fluid;

a wellhead sealing the surface of the wellbore;

a return line coupled to the wellbore so that the return line receives the second mixture;

a separator coupled to the return line and operable to deliver a gas portion of the second mixture to a gas return line and a liquid portion of the second mixture to a liquid return line;

a gas production line having a control valve and coupled to the gas return line;

a gas recycle line coupled to an inlet line of the multiphase pump and the gas return line and having a control valve;

a liquid production line having a control valve and coupled to the liquid return line;

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a liquid recycle line coupled to an inlet line of the multiphase pump and the liquid return line and having a control valve, and

a computer operable to deliver a first portion of the gas portion to the gas production line, a second portion of the gas portion to the gas recycle line, a first portion of the liquid portion to the liquid production line, and a second portion of the liquid portion to the liquid recycle line by controlling the control valves.

33. (Canceled)

34. (Canceled)

35. (Previously Presented) The system of claim 32, wherein the liquid is crude oil and the gas is natural gas.

36. (Previously Presented) The system of claim 32, further comprising a liquid and a gas reservoir coupled to an inlet line of the multiphase pump for start-up of the multiphase pump.

37. (Previously Presented) The system of claim 32, wherein the wellbore is cased and an outlet of the jet pump is in fluid communication with an annulus between the casing and the outlet line.